

Three species of the Subfamily Gelechiinae (Lepidoptera) new to Korea

Sang-Mi LEE and Kyu-Tek PARK

Center for Insect Systematics, Kangwon National University, Chuncheon, 200-701 Korea
E-mail: cispa@kangwon.ac.kr

Abstract Three species of Gelechiinae, *Angustialata gemmellaformis* Omelko, *Chorivalva grandialata* Omelko, and *Eulamprotes wilkella* (Linnaeus), are reported for the first time from Korea. Photos of imagos, illustrations of the male and female genitalia, and wing venations are provided.

Key words *Angustialata*, *Chorivalva*, *Eulamprotes*, Gelechiinae, Lepidoptera, Korea

INTRODUCTION

A taxonomic study on the Gelechiinae (including Aristotelinae, Anacampsinae, Stompteryginae, and Chelariinae) in Korea was initiated by Park (1983) with a review of 20 species of 16 genera. The second author (1994b) listed 48 species belonging to 33 genera from Korea. In the present study, three species belonging to three genera of the subfamily are newly recognized from Korea. The genus *Chorivalva* Omelko, 1988 (Type species: *C. unisaccula* Omelko, 1988) was reviewed with two species in Korea by Park (1994a). A monotypic genus, *Angustialata* Omelko, 1988, known in the Russian Far East and Northern China, and *Eulamprotes* Bradley, 1971, are known for the first time from Korea. The genus *Eulamprotes* is widely distributed in the Palearctic Region: 12 species in Europe, 3 species in Russia, and 2 species in Japan. *E. wilkella* (Linnaeus) is a worldwide species.

Material examined in the present study are based on the collection of the Center for Insect Systematics, Kangwon National University, Chuncheon, and Department of Biology, University of Incheon, Incheon.

The authors wish to express their thanks to Prof. Y.S. Bae, University of Incheon, Incheon, Korea, for the donation of valuable specimens.

SYSTEMATICS

Genus *Angustialata* Omelko, 1988

Angustialata Omelko, 1988: 150; Omelko, 1999: 141. Type species: *Angustialata gemmellaformis* Omelko, 1988. TL: Russian Far East.

The monotypic genus, *Angustialata* Omelko, is known in Russia and China (Omelko, 1988; Li, 1996). It is similar to *Stenolechia* Meyrick in the wing venation and coloration, but characterized by the male and female genitalia: arms of sacculus not well separated in the male genitalia, and female genitalia with a pair of large and unique signa.

***Angustialata gemmellaformis* Omelko, 1988** 가는날개뿔나방 (新稱)

(Figs 1, 4, 8, 11)

Angustialata gemmellaformis Omelko, 1988: 150; Li, 1996: 72, f. 110, 111; Omelko, 1999: 145.

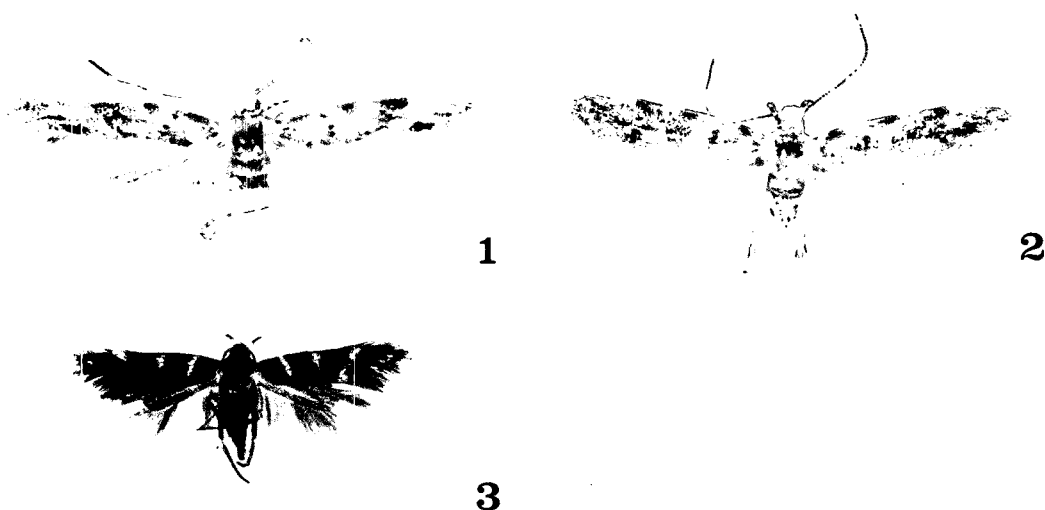
TL: Maritime Terr., Gornotaezhnoe, Ussuriysk, Russian Far East.

Diagnosis. Wingspan 10–12 mm. This species is superficially similar to *Parachronistis sellaris* Park, but distinguished by the width of hindwing narrower than that of forewing. It is also clearly discerned by the subulate cucullus lobe in the male genitalia and with a pair of large singa in the female genitalia.

Male genitalia (Fig. 8). See also Omelko (1988, figs 17–19) and Omelko (1999, figs 1–3). Uncus round on distal margin, bearing numerous long setae and fine spinules ventrally; gnathos spatulate, relatively large; cucullus lobe subulate; sacculus deeply emarginated on distal margin; aedeagus spine-like, slender, tapering to apex.

Female genitalia (Fig. 11). See also Omelko (1988, fig. 20) and Omelko (1999, fig. 4). Apophyses posteriores about 2.5 times as long as apophyses anteriores; ostium bursae large, bowl-shaped; ductus bursae short, almost 1/4 of corpus bursae; corpus bursae with a pair of characteristic shape of the singa, with numerous fine denticles.

Material examined. 1 ♂, Gwangleung, Gyunggi Prov., 10. VI. 1998 (S.H. Won); 2 ♀, Chuncheon–



Figs 1–3. Adults: 1, *Angustialata gemmellaformis* Omelko; 2, *Chorivalva grandialata* Omelko; 3, *Eulamprotes wilkella* (Linnaeus).

dam, Chuncheon, Gangwon Prov., 15. VI. 1992 (K.T. Park); 1 ♂, Jiamri, 15 km N Chuncheon, 7. VI. 1997 (Y.M. Park); 2 ♀, 1 ♂, Mt. Gubong-san, Chuncheon, 8. VI. 1998 (S.M. Lee); 1 ♀, same locality, 19. VI. 1998 (S.M. Lee); 1 ♂, same locality, 31. V. 1998 (S.M. Lee); 4 ♂, 9 ♀, Bongmyungri, Chuncheon, 4. VI. 1998 (S.M. Lee); 1 ♀, Mt. Kyejok-san, Yongwol, 27. V. 1998 (S.M. Lee).

Distribution. Korea (South; new record), China, Russian Far East.

Remarks. Omelko (1988) noted that larvae feed on young shoots of *Quercus mongolica* (Fagaceae) during May and early June.

Genus *Chorivalva* Omelko, 1988

Chorivalva Omelko, 1988: 143; Omelko, 1999: 153. Type species: *Chorivalva unisaccula* Omelko, 1988. TL: Russian Far East.

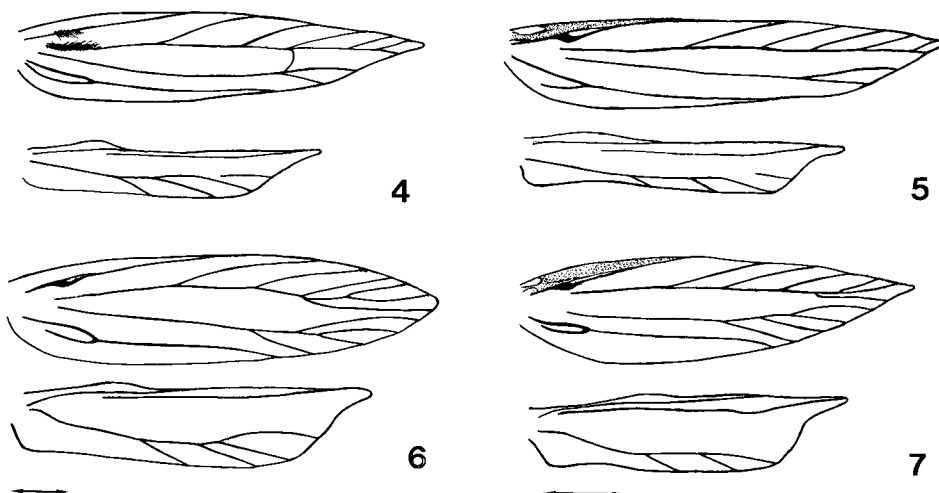
Neochronistis Park, 1989: 162; Park, 1991: 117. Type species: *Neochronistis hodgei* Park, 1989. TL: Korea.

Three species of the genus are known in the Russian Far East (Omelko, 1988), and two species in Korea (Park, 1994). It is similar to the genera *Parachronistis* Meyrick and *Stenolechia* Meyrick in the appearance, but it can be easily distinguished from the latter by the forewing venation with M_1 free or approximated to R_{4+5} at base and M_2 present, and by hairy scale tufts in the fold between 1st and 2nd abdominal segment.

Chorivalva grandialata Omelko, 1988 얼룩무늬빨나방 (新稱)

(Figs 2, 6, 9, 12)

Chorivalva grandialata Omelko, 1988: 144; Omelko, 1999: 157. TL: Maritime Terr., Ryazanovka,



Figs 4-7. Wing venation: 4, *Angustialata gemmellaformis* Omelko; 5, *Stenolechia notomochla* Meyrick; 6, *Chorivalva grandialata* Omelko; 7, *Eulamprotes wilkella* (Linnaeus). (Scales: 0.5 mm)

Khasan Distr., Russia.

Diagnosis. Wingspan, 12–17 mm. The species is similar to its allies in appearance, but distinguished by the broadened, deeply emarginated distal margin of the uncus medially in the male genitalia.

Male genitalia (Fig. 9). See also Omelko (1988, fig. 3), and Omelko (1999, fig. 3). Uncus large, broadened, emarginated medially on distal margin; cucullus long, less bent distally; sacculus lobe digitate, bent at middle; aedeagus strongly curved, with numerous fine spines in vesica.

Female genitalia (Fig. 12). See also Omelko (1988, fig. 4) and Omelko (1999, fig. 4). Apophyses posteriores about twice as long as apophyses anteriores; ostium bursae peanut-like; ductus bursae with two sclerotized lobe-like plates medially; corpus bursae ovate; signum absent.

Material examined. 1 ♂, 1 ♀, Is. Ganghwa, Gyunggi Prov., 16. VII. 1995 (Y.S. Bae); 1 ♂, Mt. Soyo-san, Dongduchon, 3. VI. 1997 (N.H. Ahn); 1 ♀, Mt. Jeombong-san, Gangwon Prov., 5. VIII. 1997 (Y.S. Bae and N.H. Ahn).

Distribution. Korea (South; new record), Russia (Maritime Terr.).

Genus *Eulamprotes* Bradley, 1971

Eulamprotes Bradley, 1971: 27; Piskunov, 1981: 704; Sakamaki, 1995: 209; Li, 1996: 50; Omelko, 1999: 110. Type species: *Tinea atrella* (Denis & Schiffermüller, 1775). TL: Unknown.

Lamprotes Heinemann, 1870: 309, a junior homonym of *Argyritis* Hbner, 1821.

Argyritis Heinemann, 1870: 283, a junior homonym of *Lamprotes* R.L., 1817.

The genus is similar to *Monochroa* Heinemann and *Metzneria* Zeller, but can be separated by the absence of the gnathos and extremely large aedeagus, attenuated to apex in the male genitalia, and by the long sclerotized ductus bursae beyond half in the female genitalia.

***Eulamprotes wilkella* (Linnaeus, 1761) 별꽃벌나방 (新稱)**

(Figs 3, 7, 10, 13)

Phalaena (*Tinea*) *wilkella* Linnaeus, 1761: 541. TL: Unknown.

Gelechia (*Brachmia*) *pictella* Zeller, 1839: 202; Heinemann, 1870: 283 (*Argyritis*); Meyrick, 1895: 574 (*Aristotelia*).

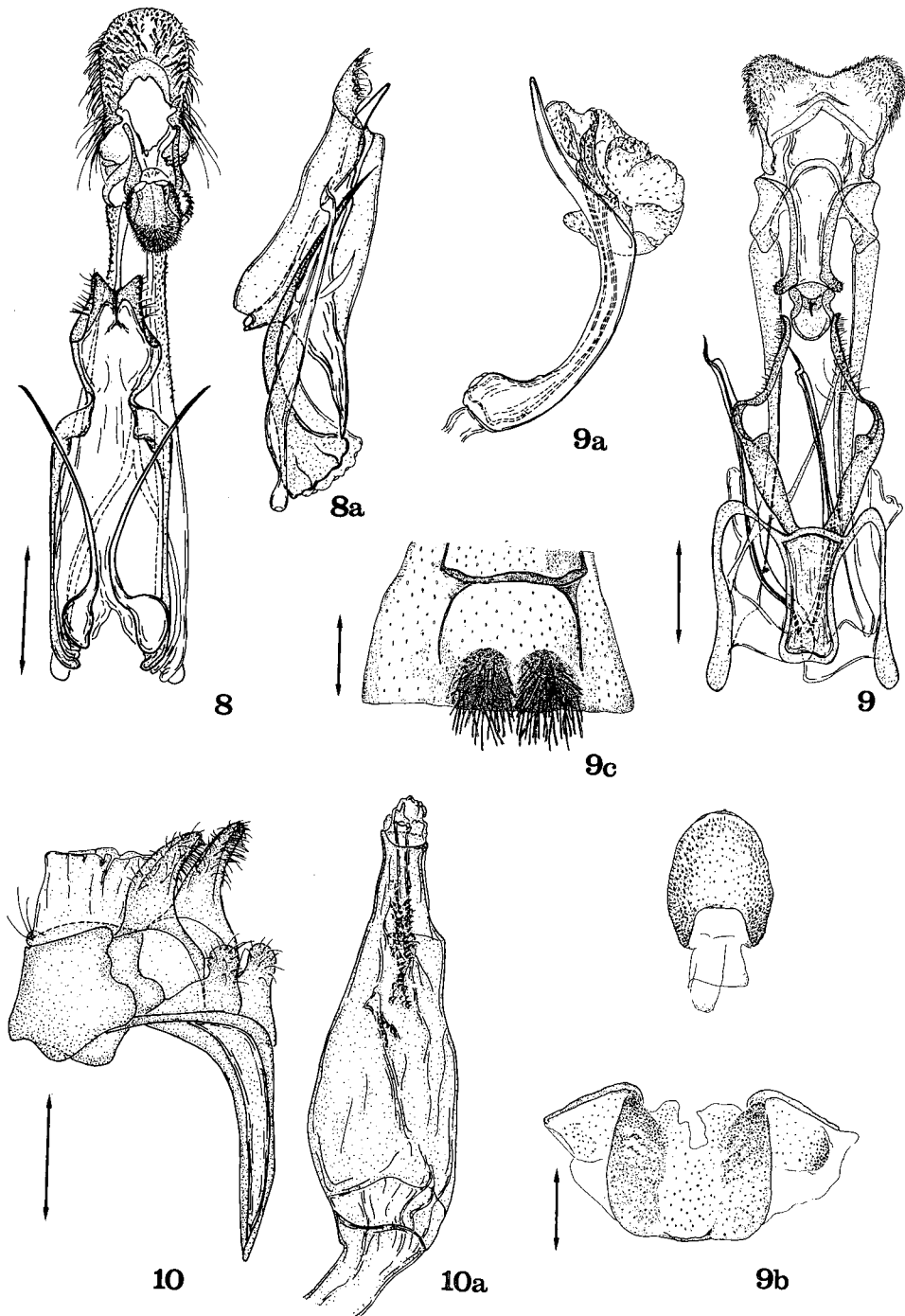
Gelechia germarella Nolcken, 1870: 585.

Eulamprotes wilkella: Sattler, 1973: 172; Piskunov, 1981: 704; Sakamaki, 1995: 214; Li, 1996: 50.

Diagnosis. Wingspan, 10–12 mm. It is differentiated from its allies by three silvery white fasciae, and a silvery white spot at the apex of the forewing.

Male genitalia (Fig. 10). See also Piskunov (1981, fig. 703: 5–6) and Sakamaki (1995, figs 2c–d). Valva short, more or less triangular; sacculus short, ovate, with some short setae; aedeagus extremely large, bulbous, attenuated to apex.

Female genitalia (Fig. 13). Female genitalia is illustrated for the first time. Ductus bursae long, caudal



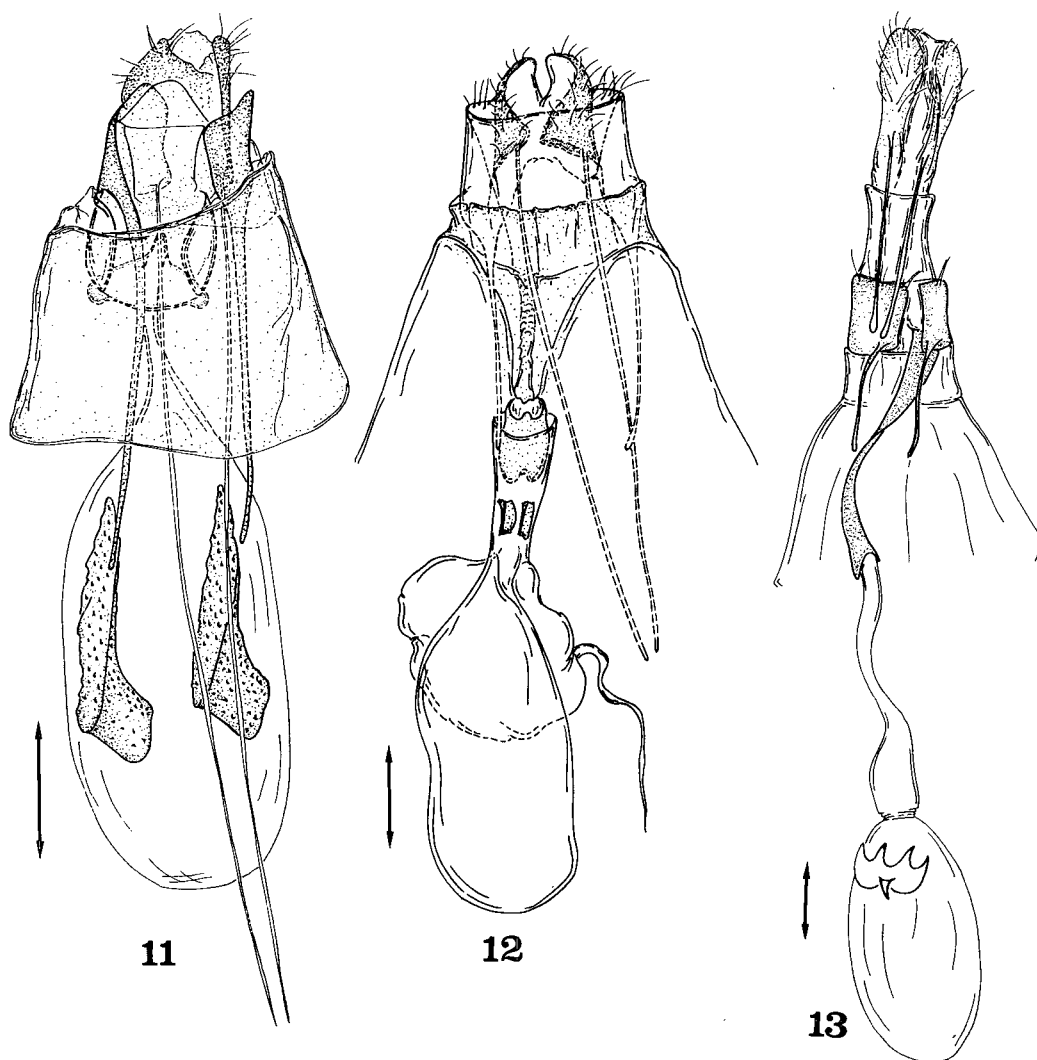
Figs 8-10. Male genitalia: 8, *Angustialata gemmellaformis* Omelko; 8a, ditto, aedeagus with saccus, cucullus; 9, *Chorivalva grandialata* Omelko; 9a, ditto, aedeagus; 9b, 8th tergite and sternite; 9c, hairy scale tufts in the fold between the 1st and 2nd segment; 10, *Eulamprotes wilkella* (Linnaeus); 10a, ditto, aedeagus. (Scales: 0.2 mm)

2/3 sclerotized; corpus bursae membranous, with an oblong signum plate bearing a pair of horn-like process on distal margin.

Material examined. 2 ♂, Gwangleung, Gyunggi Prov., 10. VII. 1982 (K.T. Park); 1 ♀, same locality, 10. VII. 1990 (K.T. Park); 1 ♀, same locality, 10. VI. 1998 (Y.C. Jang); 1 ♂, Chuncheon, Gangwon Prov., 5. VI. 1989 (K.T. Park and B.K. Byun); 1 ♂, Jiamri, 15 km N Chuncheon, 10. VI. 1997 (Y.M. Park).

Host-plant. *Cerastium fontanum* Baumg is known from Europe (Emmet, 1988).

Distribution. Korea (South; new record), Japan, China, W Europe.



Figs 11-13. Female genitalia: 11, *Angustialata gemmellaformis* Omelko; 12, *Chorivalva grandialata* Omelko; 13, *Eulamprotes wilkella* (Linnaeus). (Scales: 0.2 mm)

REFERENCES

- Li, H. 1996. A systematic study on the family Gelechiidae (Lepidoptera) from the Northwest and some other regions of China. 283 pp. Institute of Zoology, Shaanxi.
- Linnaeus, C. 1761. *Fauna Svecica*. [xviii] + 578 pp. Stockholmiae.
- Nolcken, J.H.W. 1870. Lepidopterologische Fauna von Estland, Livland und Kurland. -Arb. Nat. Forsch. Ver. Riga (N.F.) 3: 295-466.
- Omelko, M.M. 1988. New genera and species of the gelechiid moths of the Tribe Gelechiini (Lepidoptera, Gelechiidae) from Southern Primorye. *Ent. Obozr.* 67(1): 142-159 [In Russian].
- Omelko, M.M. 1999. Family Gelechiidae. pp. 102-257. In A.S. Lelej, V.S. Kononenko, G.O. Krivoluzkaya, A.N. Kupyanskaya and I.M. Levanidova (eds.), *Key to the Insects of Russian Far East*, Vol. V. Trichoptera and Lepidoptera. Pt. 2. 670 pp. Vladivostok, Dalnauka.
- Park, K.T. 1983. Microlepidoptera of Korea. *Ins. Koreana* 3: 83-92.
- Park, K.T. 1989. Systematics of the subfamily Gelechiinae (Lep., Gelechiidae) in Korea (I); Genera *Parachronistis* Meyrick and *Neochronistis* Park, gen. nov. *Korean J. Appl. Entomol.* 28(3): 154-166.
- Park, K.T. 1993. Genera *Parastenolechia* Kanazawa and *Laris* Omelko (Lepidoptera: Gelechiidae) in Korea. *Korean J. Appl. Entomol.* 32(2): 184-192.
- Park, K.T. 1994a. Notes on *Chorivalva* and *Stenolechia* species in Korea, with new synonyms (Lepidoptera, Gelechiidae). *Nota lepid.* 16(3/4): 281-289.
- Park, K.T. 1994b. Family Gelechiidae. pp. 328-330. In The Entomological Society of Korea and Korean Society of Applied Entomology (eds.), *Check List of Insects from Korea*. 744 pp. Konkuk Univ. Press, Seoul.
- Piskunov, V.I. 1981. Family Gelechiidae. pp. 659-748. In I.M. Likharev, O.L. Kryzhanovskii, Z.I. Baranova, I.M. Gromov, V.F. Zaitsev, L.A. Kutikova, G.S. Medvedev, M.E. Ter-Minasian, and N.A. Filippova (eds.), *Keys to the Insects of the European part of USSR*, Lepidoptera. 786 pp. Izdavaemye Zoologicheskimi Muzeem Akademii Nauk, Leningrad.
- Sakamaki, Y. 1995. Genera *Eulamprotes* and *Daltopora* Povoln (Lepidoptera, Gelechiidae) from Japan. *Jpn. J. Ent.* 63(1): 209-219.
- Sattler, R. 1973. A catalogue of the family-group and genus-group names of Gelechiidae, Holcopogonidae, Lecithoceridae and Symmocidae (Lepidoptera). *Brit. Mus. (Nat. Hist.) Ent.* 28(4): 155-282.
- Zeller, P.C. 1839. Versuch einer naturgemäßen Eintheilung der Schaben. *Isis, Leipzig* 1839: 167-220.

韓國產 Gelechiinae亞科 (나비目, 뽕나방科)의 3 未記錄種 보고

李 相 美 · 朴 奎 澤

江原大學校 農業生命科學大學

韓國產 Gelechiinae亞科의 3種, *Angustialata gemmellaformis* Omelko (가는날개뽕나방), *Chorivalva grandialata* Omelko (얼룩무늬뽕나방), 그리고 *Eulamprotes wikella* (Linnaeus) (별꽃뽕나방)을 未記錄種으로 보고하며, 이들에 대한 간략한 재기재를 포함하여 성충과 암수 생식기를 도해하였다.

검색어 : 나비목, Gelechiinae아과, *Angustialata*속, *Chorivalva*속, *Eulamprotes*속, 한국

(Received : June 20, 1999)

(Accepted : January 10, 2000)